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SPECIFICATION COVER SHEET

Client: Gowanus Canal Remedial Design Group

Project: Gowanus Canal – 4th St Turning Basin Pilot Study – Dredging and Capping

Project #: HPH106A

SPECIFICATION SECTION: 02 51 19 **TITLE:** DREDGED SEDIMENT AND WASTE MANAGEMENT

SPECIFICATION PREPARED BY:
(Specification Preparer, SP)

Signature _____ Date 5/19/17

Name Russell Hyatt

SCOPE AND FORMAT CHECKED BY:
(Scope and Format Checker, SFC)

Signature _____ Date 5/19/2017

Name Lauren Wellborn

DETAILED REQUIREMENTS CHECKED BY:
(Detailed Requirements Checker, DRC)

Signature _____ Date 5/19/17

Name Darrell Nicholas

APPROVED BY:
(Specification Approver, SA)

Signature _____ Date 19 MAY 2017

Name J.F. Beech

Record of Revision (Number and initial all revisions)

Rev. No	Reason	Date	By	Checked	Approval
0	TB4 Pilot Study Design - Issued for Bid	05/19/17	RH	LSW	JFB

SECTION 02 51 19

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SECTION 02 51 19

DREDGED SEDIMENT AND WASTE MANAGEMENT

PART 1 GENERAL

1.01 SUMMARY

A. This Section describes the Contractor's responsibilities for Dredged Sediment solidification/stabilization (S/S) (conducted in-barge or off-site), thermal treatment (if required), and transport to an end-use facility; waste management (including management of Debris, waste generated in the dredge water treatment system (DWTS), and Other Waste generated during the Work); and management of previously existing stockpiles.

1.02 RELATED SECTIONS AND PLANS

A. Section 01 32 00 Construction Progress Documentation

B. Section 01 33 00 Submittals

C. Section 01 41 00 Regulatory Requirements

D. Section 01 56 00 Temporary Barriers and Enclosures

E. Section 01 57 19 Temporary Environmental Controls

F. Section 01 78 00 Project Closure

G. Section 01 60 00 Product Requirements

H. Section 02 60 16 Sediment and Floatables Containment

I. Section 31 10 00 Site Preparation

J. Section 35 20 23.13 Dredging and Dewatering

K. Section 44 08 40 Dredge Water Treatment System Requirements

L. Contract Documents

1.03 REFERENCES

A. Geosyntec 2017. "PD-10/21 Dredge Material Stabilization and Dewatering Treatability Study Report (Draft)." (Provided as Attachment K.3).

B. TRC 2017. "Gowanus Community Air Monitoring Plan" (Draft in progress).

C. Geosyntec 2016. "Gowanus Canal Construction Activities Health and Safety Plan."

D. AHRS, LLC August 2016 (2016b). "PD-14 Cultural Resource Monitoring Plan, Gowanus Canal Superfund Site, Brooklyn, New York." Prepared for Gowanus Canal Environmental Remediation Trust (GCERT) and Geosyntec Consultants, Inc.

E. New York City Department of Design and Construction, 2003. "Construction & Demolition Waste Manual."

F. Geosyntec 2016. Citizens Parcel 3 Bulkhead Stability Assessment Report. (Provided as Attachment K.2).

G. EPA March 2005. "Uniform Federal Policy for Quality Assurance Project Plans. Evaluating, Assessing, and Documenting Environmental Data Collection and Use Programs; Part 1: UFP-QAPP Manual." https://www.epa.gov/sites/production/files/documents/ufp_qapp_v1_0305.pdf

H. Geosyntec 2017. 4th Street Turning Basin TarGOST® Field Investigation. (Provided as Attachment K.7).

1.04 DEFINITIONS

A. Canal-Derived Media – Impacted sediments, processed dredged material (PDM), decant water, leachates, and surface runoff.

B. Debris – Material separated from Dredged Sediments during the material separation process (as shown in the Construction Drawings and described in Section 35 20 23.13) or any object (wood, concrete, tires, plastic, rocks, rubbish, etc.) greater than 6 inches that is not considered Dredged Sediment.

C. Dredged Sediment – Material removed from the Canal which passes through the material separation process as shown in the Construction Drawings and described in Section 35 30 23.13.

D. Dredge Water Treatment System (DWTS) – The water treatment system installed at the Staging Site in accordance with Section 44 08 40.

E. In-barge S/S Mixing – The process of mixing the solidification/stabilization reagent in-barge at the dosage selected to meet the acceptance criteria for beneficial use end-placement.

F. Dredge Water Treatment System Waste – Waste generated from the DWTS including solid waste and sludges, oil from the oil/water separator, and spent treatment media.

G. Other Waste – Waste generated from day-to-day operations (e.g. office rubbish/recycling) to be regularly collected and removed from the Staging Site in accordance with this Section.

H. Processed Dredged Material (PDM) – Dredged Sediment which has been treated (via S/S and potentially thermal desorption) to meet the acceptance criteria for beneficial use end-placement.

I. Reagent – Type I or Type II Portland cement, or an alternative as proposed by the Contractor, used for Dredged Sediment S/S.

J. Solidification/stabilization (S/S) – The processing of Dredged Sediment through addition of reagent and mixing of reagent with Dredged Sediment to obtain a homogenous material.

K. Thermal treatment – The processing of Dredged Sediment through off-site thermal desorption.

L. Treatment – May refer to S/S with reagent at the selected dosage to meet the acceptance criteria for beneficial use end-placement, S/S with reagent at the selected dosage to pass Paint Filter Liquids Test (EPA SW-846 Method 9095A) required for truck transportation, or thermal treatment.

M. Underdrain Water – Water that passes through the asphalt pad and is collected in the gravel layer beneath the pad.

N. Wash Water – Collected water used to wash Debris, the asphalt pad, and any separate decontamination pad.

1.05 SUBMITTALS

A. The Contractor shall submit the following to the Owner's Representative in accordance with Section 01 33 00:

1. Dredged Sediment Management Work Plan

The Contractor shall describe the sequencing, details, and means and methods for Dredged Sediment management including, but not limited to, the following information:

a. A schedule and flow chart showing Dredged Sediment S/S, temporary storage at Staging Site (if planned), thermal treatment activities, and end-placement (both those performed by the Contractor and those performed off-site); throughputs and hold times associated with processing, laboratory testing, and end-placement; decision points, reprocessing activities, and their inter-relationship to demonstrate adequate process capacity.

b. An equipment list including all equipment to be used for in-barge mixing; sediment handling; and transport of Dredged Sediment for off-site S/S and/or off-site thermal treatment, and end placement.

   i. If the material handler is to be placed in the "Limited Work Area" shown in the Construction Drawings, the Contractor shall provide calculations documenting that the existing bulkhead and Site will remain stable. Calculations shall be stamped and sealed by a New York State licensed Professional Engineer. A Bulkhead Stability Assessment for the Staging Site is provided in Attachment K.2 for use as a reference.

c. A detailed description of equipment, methods and techniques for In-barge S/S Mixing including:

   i. A detailed description of means and methods for mooring barges used for mixing and transporting PDM off-site. The Contractor shall include a drawing with the layout of all proposed vessels for In-barge S/S Mixing.

   ii. A detailed description of S/S reagents, mix design formulation and equipment, means and techniques for the introduction and mixing of S/S reagents. The Contractor shall provide a plan using Type I or II Portland cement as the S/S reagent. In addition, the Contractor may also submit a value engineering proposal indicating an alternative mix design using alternative reagent(s), if, based on the judgement of the Contractor, the use of the alternative reagent would provide engineering value. The Contractor shall provide justification for use of the alternative reagent(s).

   iii. A detailed description of means and methods for on-site unloading of PDM from the barge, stockpiling, and loadout if the Contractor elects to offload PDM at the Staging Site.

   iv. A detailed description of equipment, methods, and techniques for transporting and off-site unloading of PDM.

   v. A detailed drawing indicating reagent staging areas and storage locations of material handling equipment at the Staging Site.

   vi. A detailed description of dust mitigation techniques while receiving and stockpiling/storing reagent at the Staging Site.

   vii. A detailed description of equipment and means and methods of dust control, including manufacturer's specifications for a spray bar or other misting system equipment to be used for controlling dust, and breathing zone air monitoring during In-barge S/S Mixing.

viii. A procurement plan for acquiring S/S reagent.

d. A detailed description of equipment, methods, and techniques for off-site S/S including:

i. The name, location, relevant points of contact, telephone numbers, and a copy of permit or license of the off-site sediment processing facility selected by the Contractor.

ii. Acceptance criteria of the selected off-site sediment processing facility.

iii. A detailed description of equipment, methods, and techniques for transporting and off-site unloading of Dredged Sediment.

iv. If the Contractor selects to loadout Treated Dredged Sediment by truck, then the following apply:

- A detailed description of equipment, methods, and techniques for initial processing of Dredged Sediment to pass the Paint Filter Liquids Test required for truck transportation.

- A detailed description of S/S reagents, mix design formulation and equipment, means and techniques for the introduction and mixing of S/S reagents. The Contractor shall provide a plan using Type I or II Portland cement as the S/S reagent. In addition, the Contractor may also submit a value engineering proposal indicating an alternative mix design using alternative reagent(s), if, based on the judgement of the Contractor, the use of the alternative reagent would provide engineering value. The Contractor shall provide justification for use of the alternative reagent(s).

- A detailed description of means and methods for on-site unloading, stockpiling, and loadout of Treated Dredged Sediment if the Contractor elects to offload on the asphalt pad.

- A detailed description of dust mitigation techniques while receiving and stockpiling/storing reagent on the Staging Site.

- A detailed description of equipment and means and methods of dust control including manufacturer's specifications for a spray bar or other misting system equipment to be used for controlling dust and breathing zone air monitoring during on-site mixing.

v. A detailed description of mix design including equipment, means, and techniques for the introduction and mixing of S/S reagents performed at the Subcontractor off-site sediment processing facility. The Contractor

shall provide a mixing plan assuming Type I or II Portland cement will be the S/S reagent. In addition, the Contractor may also submit a value engineering proposal indicating an alternative mix design using an alternative reagent, if, in the judgement of the Contractor, the use of the alternative reagent would provide engineering value.

vi. A site layout of the Subcontractor's off-site sediment processing facility that shall include a detailed description of the dedicated low-permeability pad areas for PDM stockpiling and staging, all soil and erosion control measures, construction access roads to accommodate material rehandling, and a temporary retention basin, as appropriate. Show how runoff will be collected, stored, and treated prior to discharge.

vii. A description of the PDM loadout operations and measures taken to prevent cross-contamination and/or tracking of PDM onto roadways by haulers as they leave the off-site processing facility.

viii. A detailed description of how Canal-Derived Media will be managed separately from other dredged materials being processed at the off-site processing facility.

e. A detailed description of equipment, methods and techniques for off-site thermal treatment including:

i. The name, location, relevant points of contact, telephone numbers, and a copy of permit or license of the off-site thermal treatment facility selected by the Contractor;

ii. Acceptance criteria of the selected off-site thermal treatment facility;

iii. A schedule and flowchart showing mobilization activities (if required), sediment processing activities, throughputs, hold times, and decision points;

iv. A detailed description of equipment, methods, and techniques for material handling, staging, and thermal treatment at the thermal treatment facility;

v. A detailed description of areas for stockpiling and staging dedicated by Subcontractor for the thermally treated material including all soil and erosion control measures;

vi. A description of the loadout operations, and measures taken to prevent cross-contamination and/or tracking of materials onto roadways by haulers as they leave the Subcontractor's facility; and

vii. A detailed description of how Canal-Derived Media will be managed separately from other materials being processed at the facility.

f. A Waste Characterization Sampling Plan for compliance of sampling requirements for acceptance at the off-site sediment processing facility, thermal treatment facility, and end-placement facility.

g. A facility list including the names, locations, relevant points of contact, telephone numbers, a copy of permit or license for the acceptable end-placement facilities selected by the Contractor.

h. Acceptance criteria of the selected end-placement facilities.

i. Ullage tables for barges containing Dredged Sediment to be used for estimating quantities of Dredged Sediment.

j. Signed Delegation of Authority to sign waste manifests consistent with Contract Documents.

2. Waste Management Work Plan

The Contractor shall demonstrate compliance with the requirements outlined in this Section. The Contractor shall describe the sequencing, details, and means and methods for waste management including, but not limited to, the following information:

a. Debris:

i. A list of equipment to be used to handle Debris.

- If the material handler is to be placed in the "Limited Work Area" shown in the Construction Drawings, the Contractor shall provide calculations documenting that the existing bulkhead and Site will remain stable. Calculations shall be stamped and sealed by a New York State licensed Professional Engineer. A Bulkhead Stability Assessment for the Staging Site is provided in Attachment K.2 for use as a reference.

ii. A detailed description of proposed means and methods for processing, sorting, and temporarily storing Debris to allow for inspection of Debris in accordance with the Cultural Resources Monitoring Plan.

iii. A Tire Management Plan that describes any additional processing which may be required to manage recovered tires (e.g., quartering, shredding) prior to recycling or disposal.

iv. A list of recycling facilities, landfills, and/or treatment facilities planned for disposal of Debris. This list shall include the name, location, phone number, and copy of the permit or license for each facility.

b. Existing Stockpiles:

i. A description of the process by which existing stockpiles will be removed from or relocated within the Staging Site, including waste characterization sampling procedures.

c. Other:

i. A description of the process by which relevant waste media including DWTS Waste and Other Waste generated from the Work shall be discarded.

3. A Transportation Plan that shall include copies of permits obtained for transportation and off-site disposal of DWTS Waste and Other Waste generated from the Work. The Contractor shall provide a Transportation Plan to include the following:

a. A description of the means and methods for transporting Dredged Sediment and PDM from the Staging Site;

b. A description of the means and methods for transporting Debris to recycling, landfills, and/or treatment facilities planned for disposal of Debris;

c. A description of the means and methods for transporting material from existing stockpiles at the Staging Site for off-site disposal; and

d. Copies of all relevant authorizations or permits for transportation of all material from the Staging Site including, but not limited to, Dredged Sediment, PDM, Debris, Other Waste, and material from existing stockpiles.

4. The Contractor shall provide a Quality Assurance Project Plan (QAPP):

a. The QAPP shall provide detailed methods for collecting and analyzing samples, including sampling techniques, details regarding sample transportation to the laboratory, maintenance of chain-of-custody, and quality assurance/quality control measures as required by the EPA "Uniform Federal Policy for Quality Assurance Project Plans" (EPA, 2005).

b. The QAPP will include samples collected during Work performed in the Canal and Work performed on the Staging Site and will cover all analytical samples of all media collected as part of this Work.

5. The Contractor shall provide an Asphalt Pad Management Plan to provide detailed means and methods for the following:

    a. Managing surface runoff and Underdrain Water:

        i. A detailed description of the specific approaches to be used to manage runoff from the surface of the asphalt pad as well as Underdrain Water.

    b. Covering Debris and PDM (if staged on the pad) on the asphalt pad

        i. Include the equipment expected to be used during the covering of debris and PDM, the thickness and type of cover material intended for use, and the proposed methods for securing the cover material over the piles.

    c. Cleaning of Asphalt Pad:

        i. A detailed description of the specific methods and equipment to be used in washing any accumulated sediment from the asphalt pad as needed to minimize loading to the DWTS. Include areas on Site where related equipment will be stored.

6. Progress Reports:

    a. Detailed requirements for daily and weekly submittals are provided in Section 01 32 00.

7. The Contractor shall prepare Transport and Waste Profile Submittals to include the following:

    a. For In-barge S/S Mixing:

        i. Waste profile sampling results and waste profiles for PDM from In-barge S/S Mixing;

        ii. Paint Filter Testing results if PDM is transported via truck; and

        iii. Transportation manifests.

    b. For Off-Site S/S Mixing:

        i. Paint Filter Test results if Dredged Sediment is transported via truck;

        ii. Transportation manifests;

        iii. Certified weight tickets from the processing facility for untreated Dredged Sediment or initially treated Dredged Sediment delivered to the processing facility;

iv. Weight tickets for PDM transported from the processing facility to the end-placement facility or thermal treatment facility; and

v. Waste profile sampling results and waste profiles for PDM processed at the Subcontractor's sediment processing facility.

c. Off-site thermal treatment:

i. Weight tickets or equivalent records from the thermal treatment facility for S/S treated dredged sediment delivered to the thermal treatment facility;

ii. Weight tickets or equivalent records for PDM transported from the thermal treatment facility to the end-placement facility;

iii. Waste profile sampling results and waste profiles for thermally treated sediment; and

iv. Transportation manifests.

d. End Placement:

i. Weight tickets for PDM as delivered to the end-placement facility;

ii. Certification or other means of evidence demonstrating beneficial use end-placement of PDM;

iii. Weight tickets for Debris as delivered to the disposal/recycling facility;

iv. Waste profiles for Debris as delivered to the disposal/recycling facility;

v. Weight tickets for material from existing stockpiles as delivered to the end-placement facility;

vi. Waste profile sampling results and waste profiles for existing stockpiles; and

vii. Manifests, treatment, and disposal paperwork for all relevant media.

1.06 HEALTH AND SAFETY REQUIREMENTS

A. The Contractor shall comply with environmental health and safety/training requirements in accordance with the approved Health and Safety Plan and Section 01 35 29.

PART 2 PRODUCTS

2.01 EQUIPMENT

A. The Contractor shall provide all equipment to perform the activities associated with Dredged Sediment and waste management including, but not limited to:

1. Mixing Barges or Scows. Mixing barge or scow shall be sized to ensure that it can be maneuvered between the Staging Site and the 4th Street Turning Basin as described in 35 20 23.13. Mixing barges and scows must be equipped with markings for use with ullage tables.

2. Tugs. Tugs shall be appropriately sized to allow for safe maneuvering throughout the Canal as described in 35 20 23.13.

3. Material Handler. A material handler will be required to offload material from the barge onto the asphalt pad.

4. Equipment used for mixing and handling of Dredged Sediment. Unloading cranes, buckets, hoppers, and other equipment shall be designed and equipped with spill plates, drip pans, and/or other mechanisms to prevent Dredged Sediment or water from being spilled into the Canal or onto the Staging Site. Any mixing and handling equipment placed on the Staging Site along the bulkhead shall be in a location consistent with the bulkhead stability assessment provided in Attachment K.2.

5. Equipment used for handling Debris. Equipment used for handling Debris shall be kept clean to prevent sediment from being spilled into the Canal or onto the Staging Site.

6. Equipment used for handling Wash Water and dredge water. The Contractor shall furnish pumps and piping to transfer dredge water and Wash Water from barges and Wash Water from the asphalt pad and any separate decontamination pad in accordance Section 44 08 40.

7. Equipment used for transporting Debris, treated sediment, material from existing stockpiles, DWTS Waste, and Other Wastes for offsite disposal. Barges, trucks, or railcars for transporting Debris, treated sediment, DWTS Waste, and Other Wastes shall be covered to prevent release of material during transport. Water-tight covers will be required for transport during precipitation. The Contractor shall be responsible for safeguarding transportation equipment from leakage of material in transport. Barges, trucks, or railcars shall be kept clean such that sediment and Debris are not present outside of containment.

PART 3 EXECUTION

3.01 GENERAL

A. Dredged sediment from the Canal will be processed to meet acceptance criteria at beneficial use end-placement facilities, to the extent practical. The dredged sediment treatment approach for the Pilot Study has been developed based on the results of the PD-10/21 Treatability Study and feedback from thermal treatment and beneficial use end-placement facilities and is as follows:

1. Dredged Sediment will undergo S/S treatment on-site via In-barge S/S Mixing or off-site at a commercial sediment processing facility;

2. After S/S treatment, PDM will be tested to determine acceptability at the beneficial use end-placement facility; and

3. If PDM does not meet the acceptance criteria, PDM may require thermal treatment prior to end-placement.

B. This section establishes execution requirements pertaining to:

1. In-barge S/S Mixing;

2. Off-site sediment stabilization at a commercial sediment processing facility;

3. Off-site thermal treatment as needed for Dredged Sediment requiring further treatment after S/S to meet beneficial use end-placement acceptance criteria;

4. Placement of PDM at an Owner-approved end-placement facility;

5. Handling and disposal of Debris;

6. Handling and disposal of DWTS Waste;

7. Handling and disposal of existing stockpiles present on the Staging Site; and

8. Handling and disposal of all Other Waste streams generated during the Work.

C. All Work shall be conducted in accordance with the regulatory requirements outlined in Section 01 41 00.

D. All waste streams generated during the Work will be disposed of in compliance with all applicable local, state, and federal regulations.

3.02 GENERAL DREDGED SEDIMENT TREATMENT AND END-PLACEMENT REQUIREMENTS

A. Dredged Sediment shall be beneficially used following S/S and thermal treatment (if thermal treatment is required to meet acceptance criteria). The Contractor is responsible for identifying acceptable facilities to beneficially use the PDM. Acceptable beneficial use applications include, but are not limited, to the following:

1. Landfill cover for solid waste;

2. Strip mine reclamation; and

3. Fill material for industrial or commercial development.

B. Dredged Sediment will undergo S/S (via In-barge S/S Mixing by the Contractor or at an off-site commercial processing facility) such that PDM meets the acceptance criteria for the approved beneficial use end-placement application. Dosage of Portland cement shall be no greater than 25% by wet weight. Should review of analytical testing of the PDM indicate that the material is not adequate to meet beneficial use end-placement acceptance criteria, PDM is to be thermally treated such that the treated sediment meets beneficial use end-placement acceptance criteria. Attachment K.3 provides the ex-situ stabilization treatability study report, which includes laboratory analytical testing data for untreated soft and native sediment as well as treated soft and native sediment. The Contractor may use this data as a reference; however, waste profiling is the responsibility of the Contractor.

C. The Contractor shall perform all testing and inspections required to evaluate compliance with end-placement acceptance criteria for beneficial use.

D. The Contractor shall estimate quantities of Dredged Sediment contained in barges after decanting of excess dredge water through use of ullage tables.

E. If processed Dredged Sediment is transported via truck or rail, it must, at a minimum, pass the Paint Filter Liquids Test.

3.03 IN-BARGE S/S MIXING OPERATIONS AND HANDLING OF PDM

A. The Contractor shall perform In-barge S/S Mixing in order to evaluate the: efficiency of mixing, effectiveness of S/S reagents, physical properties with varying curing times, and odor and dust release during mixing. The Contractor shall adhere to the following specifications regarding In-barge S/S Mixing:

1. In addition to complying with the community air monitoring plan (CAMP), In-barge S/S Mixing shall be performed so as to minimize dust generated during mixing operations such that dust is not visible beyond the immediate vicinity of the mixing barge. In order to adequately control dust emissions, the Contractor shall

use a spray bar or other system approved by the Owner's Representative. Dust mitigation techniques will also be applied as needed while receiving the reagent and stockpiling/storing reagent.

2. The Contractor shall monitor air in the breathing zone during in-barge mixing in accordance with the Contractor's Health and Safety Plan (HASP).

3. S/S mixing shall continue until no pockets of unmixed reagent are visible and the material appears visually homogenous.

4. The Contractor shall have readily available adequate spill containment and cleanup supplies in the event of a spill in accordance with Section 01 57 19.

5. The Contractor must coordinate on-water movements with all local marine traffic during in-barge mixing operations.

6. The Contractor shall perform waste profile sampling of the PDM prior to transporting off-site.

7. PDM shall be managed exclusively on barges or on the asphalt pad and shall not be placed elsewhere on the Staging Site. If the Contractor chooses to stockpile PDM on the asphalt pad, stockpiles shall be covered with 6-mil plastic sheeting, at a minimum, which is secure and free from holes or other damage at the end of every work day and prior to the onset of rain or snow, or as directed by the Owner's Representative, to prevent precipitation from entering the stockpiles.

8. Untreated material shall not be permitted to be stockpiled on the Staging Site including on the asphalt pad.

9. If the Contractor elects to transport PDM via truck, trucks must be loaded on the asphalt pad and decontaminated as specified in this Section and in Section 31 10 00.

10. The Contractor is responsible for coordination of the transportation of PDM to an approved off-site unloading facility, unloading the PDM and transport from the off-loading facility to a beneficial use end-placement facility or thermal treatment facility as appropriate.

11. The Contractor shall be responsible for any additional transportation, handling, and treatment of PDM due to rejection of PDM that has been transported to the end-placement facility or thermal treatment facility.

3.04 S/S OF DREDGED SEDIMENT AT A COMMERCIAL SEDIMENT PROCESSING FACILITY

A. The Contractor shall arrange for Dredged Sediment which is not treated via In-barge S/S Mixing to be solidified/stabilized for beneficial use end-placement at an off-site commercial sediment processing facility.

B. The Contractor may choose to transport Dredged Sediment off-site by truck or barge. If the Contractor chooses to transport Dredged Sediment by truck, then the following specifications shall apply:

1. Dredged Sediment must first be treated to pass the Paint Filter Liquids Test prior to loadout.

2. The Contractor may use the asphalt pad to temporarily stockpile treated Dredged Sediment. However, untreated Dredged Sediment is not permitted on the asphalt pad.

3. In addition to complying with the CAMP[1], reagent mixing shall be performed so as to minimize dust generated during mixing operations such that dust is not visible beyond the immediate vicinity of the mixing vessel. In order to adequately control dust emissions, the Contractor shall use a spray bar or other system approved by the Owner's Representative. Dust mitigation techniques will also be applied while receiving the reagent and stockpiling/storing reagent as needed.

4. The Contractor shall monitor air in the breathing zone during reagent mixing in accordance with the Contractor's HASP.

5. Mixing shall continue until no pockets of unmixed reagent are visible and the material appears visually homogenous.

6. The Contractor shall have readily available adequate spill containment and cleanup supplies in the event of a spill in accordance with Section 01 57 19.

7. Dredged Sediment shall be managed exclusively on barges, the asphalt pad, and loadout trucks and shall not be placed elsewhere on the Staging Site. If the Contractor chooses to stockpile treated Dredged Sediment on the asphalt pad, stockpiles shall be covered with 6-mil plastic sheeting, at a minimum, which is secure and free from holes or other damage at the end of every work day and prior to the onset of rain or snow, or as directed by the Owner's Representative, to prevent precipitation from entering the stockpiles.

[1] CAMP will be provided upon request.

C. It is the responsibility of the Contractor to ensure that Dredged Sediment meets any requirements for transport and acceptance to the commercial sediment processing facility (Section 01 41 00).

D. The commercial sediment processing facility Subcontractor must size and design operations and stockpile pad to ensure that processing operations are not impacted by lack of capacity.

E. Canal-Derived Media shall be managed separately from other dredged materials being processed at the facility.

F. Haulers shall not track material onto roadways as they leave the Subcontractor's facility.

G. The Contractor is responsible for coordinating the transportation of PDM from the commercial sediment processing facility to a thermal treatment facility, if required, and/or to the end-use facility.

H. The Contractor is responsible for performing all required sampling of the PDM to determine if PDM meets beneficial use end-placement criteria or if thermal treatment is appropriate.

I. The Contractor shall be responsible for costs associated with additional transportation, handling, and treatment of PDM due to rejection of PDM that has been transported to the end-placement facility or thermal treatment facility.

3.05 MANAGEMENT OF PHASE II DREDGED SEDIMENTS

A. Dredged Sediments from Phase II shall be processed separately from other Dredged Sediments. Blending with other Dredged Sediments is not permitted.

B. For Phase II Dredged Sediments treated via In-Barge S/S Mixing, waste characterization samples shall be collected from each barge prior to any barge consolidation or transportation of barges off-site to determine if further thermal treatment is required. For Phase II Dredged Sediments treated at an off-site stabilization facility, waste characterization samples shall be collected after S/S treatment prior to transportation to the beneficial use end-placement facility to determine if further thermal treatment is required. Results from the TarGOST® investigation are provided in Attachment K.7.

C. If PDM from Phase II does not meet acceptance criteria at the end-use facility, the material shall be thermally treated prior to beneficial use.

3.06 DEBRIS MANAGEMENT

A. Debris shall be managed as follows:

1. Debris shall be washed in accordance with Section 35 20 23.13. Washing of Debris can either be performed on the barge or on the asphalt pad. Regardless, Wash Water must be captured and treated through the DWTS.

2. The Contractor shall make reasonable efforts to divert Debris from landfills and to facilitate recycling of materials in accordance with guidelines in the Construction and Demolition Waste Manual (NYC DDC, 2003). The Contractor shall separate, store, protect, and handle identified recyclable Debris in a manner that maximizes recyclability of identified materials.

3. Debris shall be managed exclusively on barges and on the asphalt pad and shall not be placed elsewhere on the Staging Site.

4. Debris shall be placed on the asphalt pad to allow for inspection of the Debris in accordance with the Cultural Resources Monitoring Plan.

5. The Contractor shall preserve cultural resources in accordance with Section 35 20 23.13 and the Cultural Resources Monitoring Plan.

6. When practical, the Contractor shall clean and segregate recyclable Debris from non-recyclable Debris.

7. At the end of each work day and prior to the onset of rain or snow, or more frequently as directed by the Owner's Representative, Debris piles shall be covered and secured using, at a minimum, 6-mil plastic sheeting free from holes or other damage to prevent precipitation from entering the Debris piles.

8. Covers shall be secured suitably to protect Debris piles from wind.

9. After Debris is segregated and cultural resources inspection is completed, Debris shall be transported to the recycling facility or landfill for disposal as non-hazardous waste.

3.07 ASPHALT PAD AND WASH WATER MANAGEMENT

A. The Contractor shall manage activities on the asphalt pad such that unnecessary delays are not incurred due to spatial limitations on the pad.

B. For stockpiling of PDM or Debris and for washing of vehicles on the asphalt pad, the following specifications apply:

1. To prevent the release of sediment from the asphalt pad, the Contractor shall wash (i.e. spray down) the asphalt pad with potable water or recycled water from the DWTS (Section 44 08 40) as needed to minimize loading to the DWTS, or as directed by the Owner's Representative. Water pressure shall be adequate to effectively wash sediment from the pad and shall be no less than 150 psi. When the

pad is washed free of visible sediment and sheen, this process will be referred to as "decontaminating" the asphalt pad.

2. Wash Water will be allowed to accumulate on the asphalt pad to a depth less than that which would allow water to overtop the curb. Any water which overflows the asphalt pad shall be considered a spill and managed in accordance with the Contractor's Spill Prevention and Control Plan.

3. Wash Water will drain to a sump area in the northeast corner of the asphalt pad from which the Contractor will be responsible for transferring the Wash Water to the DWTS. Wash Water shall not be left overnight to settle and must be pumped at a minimum at the end of each day when Wash Water is present on the pad.

4. The Contractor shall treat accumulated sediment from the sump area as Dredged Sediment and it shall be treated either by in-barge mixing or sent for off-site commercial sediment stabilization.

C. If the asphalt pad has been decontaminated or is not in use, the following specifications apply:

1. Stormwater accumulating on the asphalt pad may be directed to the stormwater grate indicated on the Construction Drawings.

D. The Contractor shall collect Underdrain Water from the aggregate base underlying the asphalt pad after debris removal and dredging activities are complete and the pad has been decontaminated. Underdrain Water shall be transferred to the DWTS and treated in accordance with Section 44 08 40.

E. The Contractor shall be responsible for maintaining the integrity of the asphalt pad.

1. The Contractor shall conduct weekly inspections of the asphalt pad accompanied by the Owner's Representative. If cracks are detected, the Contractor shall be responsible for the required repairs.

3.08 MANAGEMENT OF EXISTING STOCKPILES

A. Remove, transport, and dispose of material in existing stockpiles 1 and 3 identified on the Construction Drawings and in Table 02 51 19-1 in accordance with all applicable local, state, and federal regulations. Fees associated with disposal shall be handled in accordance with 01 22 00.

B. The Contractor may assume that stockpile material is comprised of nonhazardous material but must still perform any waste profile sampling as required by the end-placement facility. The Contractor shall dispose of the material in accordance with the waste profile sampling results.

C. The Contractor shall either relocate Stockpile 4 to the Approximate Limits of Remediation by Others as presented in the Construction Drawings, if needed, or leave in place.

D. The Contractor shall not disturb Stockpile 2.

3.09 MANAGEMENT OF DWTS WASTE AND OTHER WASTES GENERATED FROM THE WORK

A. The Contractor shall treat all spent treatment media from the DWTS as contaminated material and shall either recycle the media or discard properly in accordance with local, state, and federal regulations.

B. Oil from the oil/water separator of the DWTS shall be containerized and disposed properly in accordance with local, state, and federal regulations.

C. Used personal protection equipment (PPE) shall be discarded as refuse.

D. All water generated during this Work shall be treated in the DWTS in accordance with Section 44 08 40.

E. All other contaminated material generated during the Work shall be containerized and discarded properly in accordance with local, state, and federal regulations.

3.10 MAINTAINING STAGING SITE CLEANLINESS

A. The Contractor shall keep the Staging Site clean while construction is in progress. The Contractor shall perform cleaning operations daily such that structures, grounds, and public property are free from accumulations of waste materials and rubbish.

B. The Contractor shall implement adequate spill protection measures on the Staging Site and on any vessels to prevent remediation-derived waste from polluting the Staging Site or the Canal. The Contractor shall be prepared with spill containment equipment in the event of a release of sediment or dredge water according to the Spill Prevention Plan and Section 01 57 19.

C. The Contractor shall manage all wastes on the Staging Site and temporary facilities such that they do not create a hazardous condition and are not a hazard to on-site personnel.

D. The Contractor shall control accumulation of waste materials and trash. Recycle or dispose of collected materials off-site at regular intervals. Maintain good housekeeping practices for the Staging Site and temporary facilities throughout construction:

1. Separate, store, protect, and handle identified recyclable and salvageable waste products in a manner that maximizes recyclability and salvage ability of identified materials; and

2. Provide and clearly identify and label the necessary containers, bins, and storage areas to facilitate effective waste management.

E. The Contractor shall comply with all regulations pertaining to management of waste and with Section 01 41 00.

F. When work is complete, conduct project closure activities in accordance with Section 01 78 00.

TABLE 02 51 19-1

EXISTING STOCKPILE DETAILS

Pile	Material	Volume Estimate (CY)
1	Mixed gravel, fill, and/or concrete	265
2	Mixed gravel, fill, and/or concrete	327
3	Mixed debris including timbers and steel sheeting	161
4	Concrete blocks	596
	Total Estimated Volume For Removal	426

Notes:

1. Volume estimates were completed by Rogers Surveying, PLLC utilizing the composite Method based on surveys of the stockpiles on March 27, 2017. The volumes presented do not account for shrinkage or swelling which may occur when the stockpiles are moved.
2. Stockpile 2 shall not be disturbed.
3. Stockpile 1 shall be disposed of during site preparation.
4. Stockpile 4 shall be left in place or relocated to the Approximate Limits of Remediation By Others as presented on the Construction Drawings.

[END OF SECTION]